REMARKS

Claims 1, 5 to 8, 10, 12 to 15, and 17 to 24 are pending in this application.[1] Of these, claims 1, 8 and 10 are independent. Favorable reconsideration and further examination are respectfully requested.

In the Office Action, independent claim 1 remains rejected over U.S. Patent No. 7,043,109 (Kish) in view of U.S. Publication No. 2001/0020123 (Diab); and independent claims 8 and 10 remain rejected over Kish in view of U.S. Publication No. 2002/0070359 (Kai). References applied against the dependent claims include U.S. Patent No. 5,736,848 (DeVries), U.S. Publication No. 2002/0048022 (Schmelzer), and U.S. Patent No. 5,047,711 (Smith). Without conceding the propriety of the rejections, independent claims 1, 8 and 10 have been amended, as shown above.

Independent claim 1 is presented below.

> 1. A method for use with an integrated circuit that is light-sensitive, the method comprising:
> applying different wavelengths of light to the integrated circuit, the integrated circuit producing output signals in response to the different wavelengths of light, the integrated circuit comprising a storage medium, the storage medium comprising at least one of a Zener diode, a fuse, or an electrically erasable programmable read-only memory;
> measuring the output signals to obtain measured values;
> comparing the measured values to setpoint values that correspond to the different wavelengths of light;
> obtaining correction values for the different wavelengths of light, the correction values being based on comparison of the measured values to the setpoint values; and
> storing the correction values on the storage medium of the integrated circuit;
> wherein the integrated circuit is on a semiconductor substrate;
> wherein the method is performed using a testing card for integrated circuits;
> wherein testing needles form contacts between the testing card and the integrated circuit, and wherein the testing needles are for placement on contact areas of the integrated circuit for storing data on the integrated circuit; and
> wherein the different wavelengths of light are applied via light-emitting diodes that are mounted atop the testing card.

[1] The Examiner is urged to independently confirm this recitation of the pending claims.

The applied art is not understood to disclose or to suggest at least the underlined portions of claim 1 above. In this regard, the Office Action refers to Fig. 22 of Kish for its disclosure of contact probes 206A/B.[2] These contact probes, however, are used "provide wafer level reliability screening before or after wafer burn-in or die cleaving"[3], and are not understood to be used for storing data on an integrated circuit, as claimed.

Furthermore, we do not understand Kish to disclose an integrated circuit comprising a storage medium that comprises at least one of a Zener diode, a fuse, and an electrically erasable programmable read-only memory. In rejecting claims 23 and 24, the Office Action notes that Kish describes a "read-only memory" (an EPROM) at column 34, lines 6 to 10.[4] This is correct, however, we also note that Kish does not state that this memory included in its photonic integrated circuit (PIC). Instead, Kish states the following:

> As previously indicated, the calibration data for controlling modulator and SOA and/or PIN photodiode parameters can be stored in a programmable memory, such as an EPROM, and packaged with the PIC for use by the end user or customer.[5]

That is, the memory is packaged with the PIC, but not part of the PIC. Kish is silent regarding storing data on a fuse or a zener diode, as claimed.

Diab, which was cited for its disclosure of applying different wavelengths of light via light-emitting diodes, is not understood to remedy the foregoing deficiencies of Kish. Accordingly, claim 1 is believed to define over the applied art.

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[2] Office Action, page 2
[3] See, e.g., Kish at col. 27, lines 43 and 44
[4] Office Action, page 6
[5] Kish, col. 34, lines 6 to 10

Independent claim 8 is presented below.

8. A semiconductor chip comprising:
a light-sensitive integrated circuit that stores information for use in correcting a wavelength-dependent output signal of the light-sensitive integrated circuit; and
a temperature sensor for measuring a temperature of an external light source that illuminates the light-sensitive integrated circuit, the light-sensitive integrated circuit for producing the wavelength-dependent output signal in response to light from the external light source;
wherein the light-sensitive integrated circuit stores correction data that is derived using the temperature of the external light source, the correction data for use in correcting the wavelength-dependent output signal, the light-sensitive integrated circuit comprising a storage medium for storing the correction data, the storage medium comprising at least one of a Zener diode, a fuse, or an electrically erasable programmable read-only memory.

The applied art is not understood to disclose or to suggest at least the underlined portions of claim 8 above. As explained above with respect to claim 1, Kish is not understood to disclose or to suggest an integrated circuit comprising a storage medium for storing the correction date. Rather, as explained above, Kish describes an EPROM that is packages with its PIC, but not included in its PIC, as claimed. Kai, which was cited for its disclosure of a temperature sensor, is not understood to remedy this deficiency of Kish. Accordingly, claim 8 is believed to define over the applied art.

Independent claim 10 is presented below.

10. A method for use with an integrated circuit that is light sensitive, the method comprising:
illuminating the integrated circuit using an external light source, the integrated circuit comprising a photodiode and producing an output signal in response to light from the external light source;
providing, to the integrated circuit, information about the wavelength of the light from the external light source;
measuring a temperature of the external light source using a temperature sensor;
correcting the information about the wavelength of the light using the temperature to thereby produce corrected information; and
correcting the output signal using the corrected information, the output signal being corrected based on a sensitivity of the photodiode and based on a temperature dependence of the external light source;
wherein a semiconductor chip comprises the integrated circuit and the temperature sensor.

The applied art is not understood to disclose or to suggest at least the underlined portions of claim 10 above. In this regard, the Office Action states:

> Kish et al. lacks specifically a temperature sensor for measuring temperature of light source and correction data derived from the temperature, so that it is on the integrated circuit.
>
> Kai et al. discloses a temperature sensor that determines a temperature of the light sources, and uses the output of the temperature sensor to control the oscillation wavelengths by compensation for temperature conditions (abstract). temperature sensor (figure 3 element 24) is in the vicinity of the LD array chip-20 (chips are known to be located on integrated circuits/wafers- there would be a type of board/motherboard/integrated circuit supporting and providing proper connections- power and ground- to the chip and thermistor, possibly being shown in the figure by the unlabeled box surrounding elements 20 and 24).

Element 24 in Fig. 3 of Kai is an etalon filter. As explained in Kai:

> [0031] The control unit 14 includes a Peltier element 28 provided so as to allow heat exchange to the housing 10, an etalon base 30 fixed to the Peltier element 28, an etalon filter 32 provided on the base 30, and a glass block 34 provided on the base 30. The glass block 34 is in the form of a trapezoidal prism, and it is positioned so as to longitudinally transmit the light output from the light source unit 12. A pair of coupler films 36 and 38 are provided on the input and output slant surfaces of the glass block 34, respectively, so as to extract parts of the lights output from the light source unit 12. The light extracted by the coupler film 36 is supplied through the etalon filter 32 to a photodetector 40, in which the light is converted into an electrical signal according to the intensity of the light received. On the other hand, the light extracted by the coupler film 38 is supplied directly to a photodetector 42, in which the light is converted into an electrical signal according to the intensity of the light received. (emphasis added)
>
> [0033] The etalon filter 32 used as a part of the multiwavelength locker has temperature dependence to be determined by its material. In the case of a general glass material, the etalon filter 32 has a temperature dependence of about 10 pm/°C. Accordingly, if the etalon filter 32 is mounted on the same base as that for mounting the LD array chip 20, the transmission peak of the etalon filter 32 varies with a change in temperature of the LD array chip 20. To cope with this problem, the etalon filter 32 is mounted on the etalon base 30 independent of the LD base 18 on which the LD array chip 20 is mounted as shown in FIG. 3. (emphasis added)
>
> [0071] In the light source module shown in FIG. 3, the thermistor 24 is used to detect the temperature of the LD array chip 20, and the thermistor 44 is used to detect the temperature of the

> etalon filter 32. Since the thermistor 24 is mounted on the LD base 18, the temperature of the thermistor 24 changes with changes in output wavelength channel. Accordingly, the temperature of the thermistor 24 may remain near 50°C. at the maximum, so that the deterioration of the thermistor 24 is large. On the other hand, the thermistor 44 is used to control the temperature of the etalon filter 32 to a constant temperature within the range of 25 to 30°C, so that a temperature change of the thermistor 44 is relatively small and its deterioration is therefore small. (emphasis added)

Thus, Kai describes controlling etalon filter 24 using thermistor 44. Kai does not disclose or suggest that the output signal of an integrated circuit comprising a photodiode is corrected. Furthermore, we do not understand Kai to disclose or to suggest that the output signal is corrected based on a sensitivity of the photodiode and based on a temperature dependence of the external light source. Accordingly, claim 10 is believed to define over the applied art.

Dependent claims are also believed to define patentable features. Each dependent claim partakes of the novelty of its corresponding independent claim and, as such, each has not been discussed specifically herein.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

In view of the foregoing amendments and remarks, we respectfully submit that the application is in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

The undersigned attorney can be reached at the address shown below. All telephone calls should be directed to the undersigned at 617-521-7896.

Please apply any deficiency in fees or credit any overpayment to Deposit Account 06-1050 referencing Attorney Docket No. 14603-012US1.

Respectfully submitted,

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